

**Construction CPM Conference**

# **Creating User Friendly Schedules The Human Side**

**Presented by  
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# Agenda

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- **Introduction**
- **What makes a “Good” schedule?**
- **Topics**
  - **Work Breakdown Structure (WBS)**
  - **Descriptions**
  - **Milestones**
  - **Activity IDs**
- **Schedule Review**
- **Questions**

# Jonathan Japka, PMP

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- **8 years as independent consultant (2004 to present)**
  - **2008 Primavera Excellence Award**  
**Amtrak Engineering – lead designer**
  - **NY SCA, Lockheed Martin, Merck**
- **14 years with Primavera Systems PAR (1990 to 2004)**
  - **Taught Primavera software to over 3000 students**
  - **Consulted on over 100 projects**
- **Implemented over 20 Enterprise level systems**
  - **Delaware DOT, NJ DOT, NJ SCA, NY SCA**
- **PMP certification since 1996**
  - **Instructor PMP Foundations class Delaware Valley PMI**
  - **Taught at Villanova and Millersville Universities**
- **Specialization in Construction Management**
  - **Rutgers College of Engineering**

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# What Makes a good schedule?

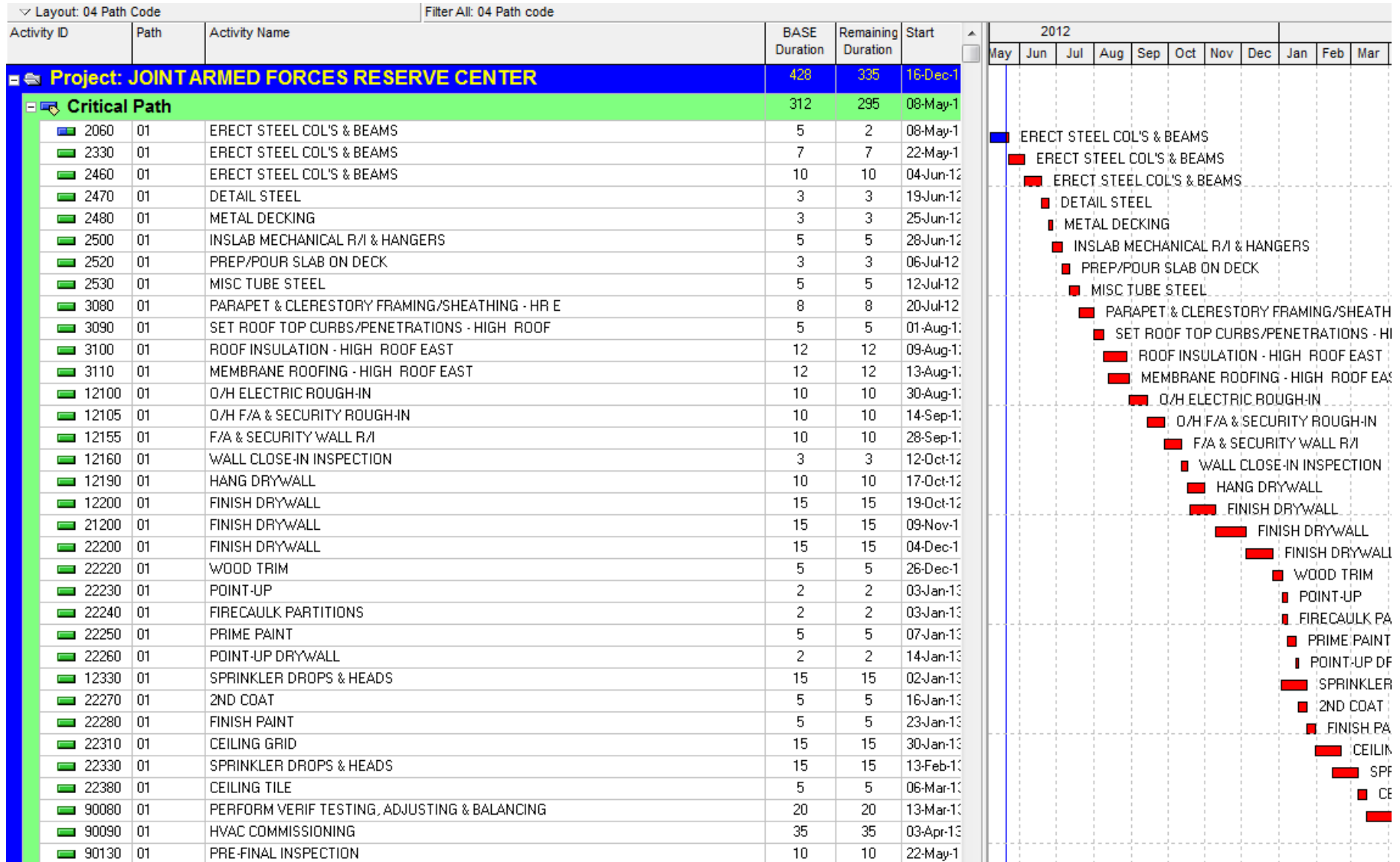
**People Use it!**

# Why do people use it?

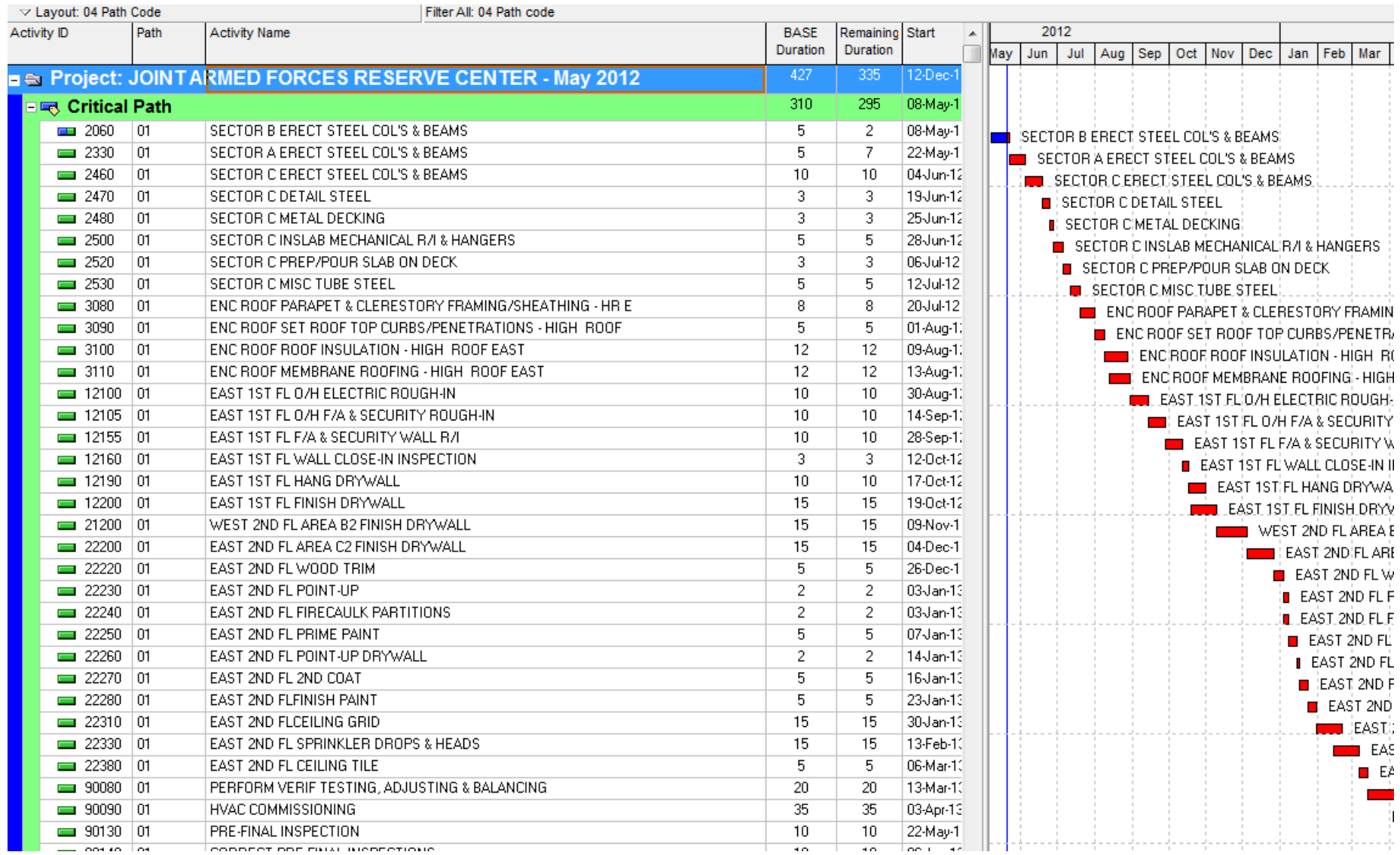
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- Easy to use
- Makes Sense
- Well Organized
- Easy to understand
- User friendly

# Bad Schedule



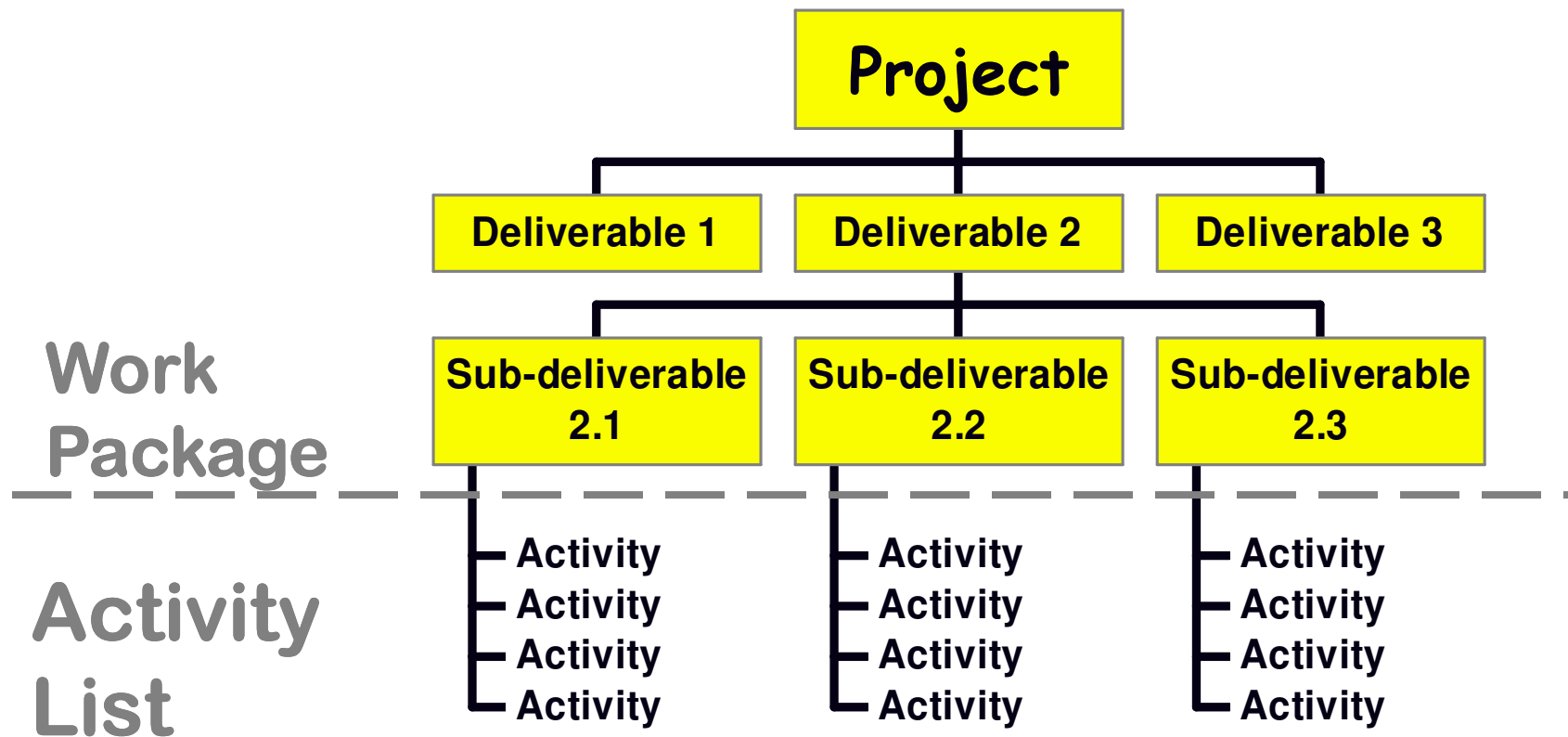
# Good Schedule



# What is a WBS?

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Just an Outline





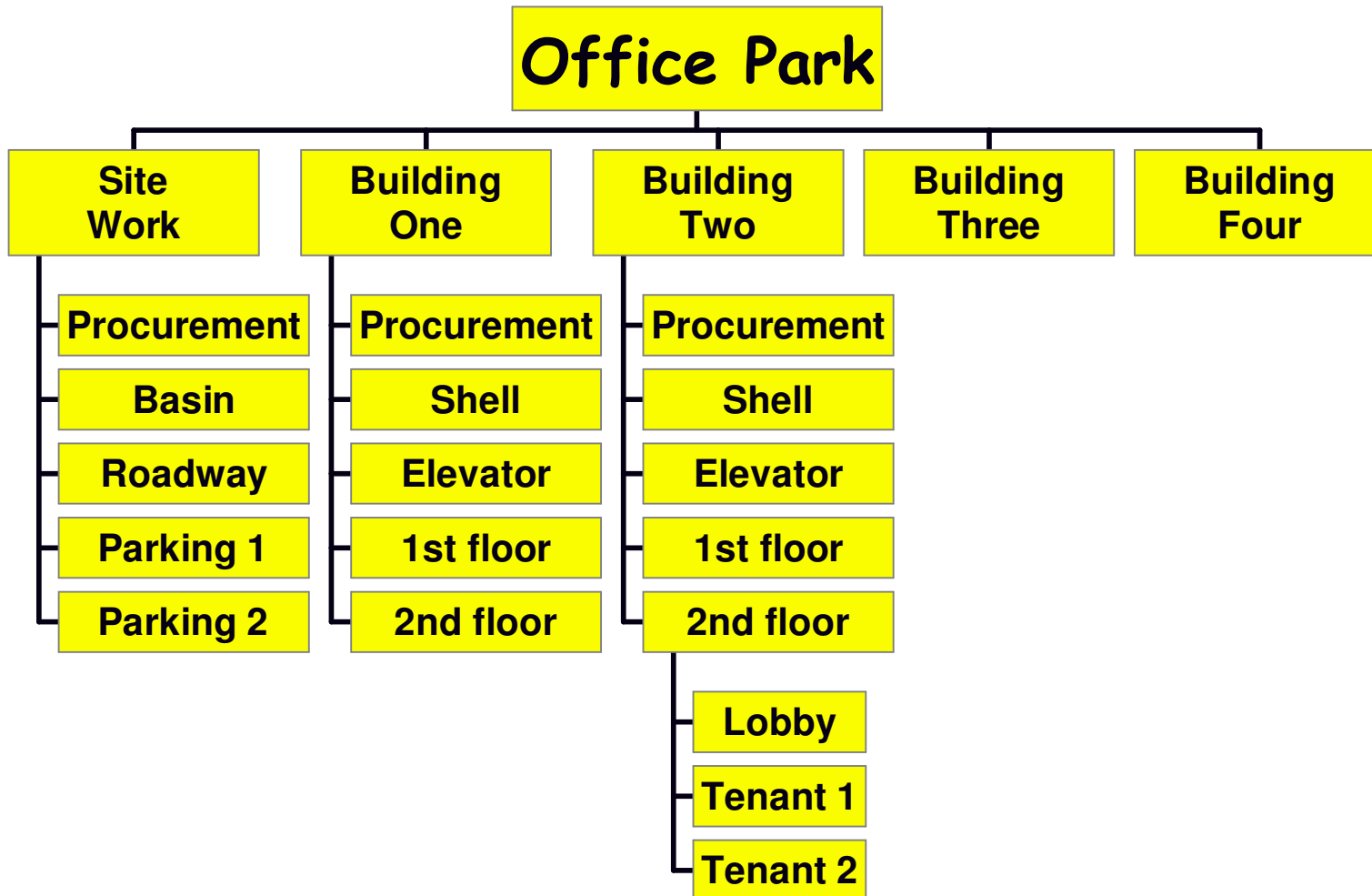
# Construction Deliverables

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- **E**ngineering (Design)
  - Studies
  - Drawings
  - Reports
- **P**rocurement
  - Stuff
- **C**onstruction (Area)
  - Building
  - Roads
- **S**tart-up

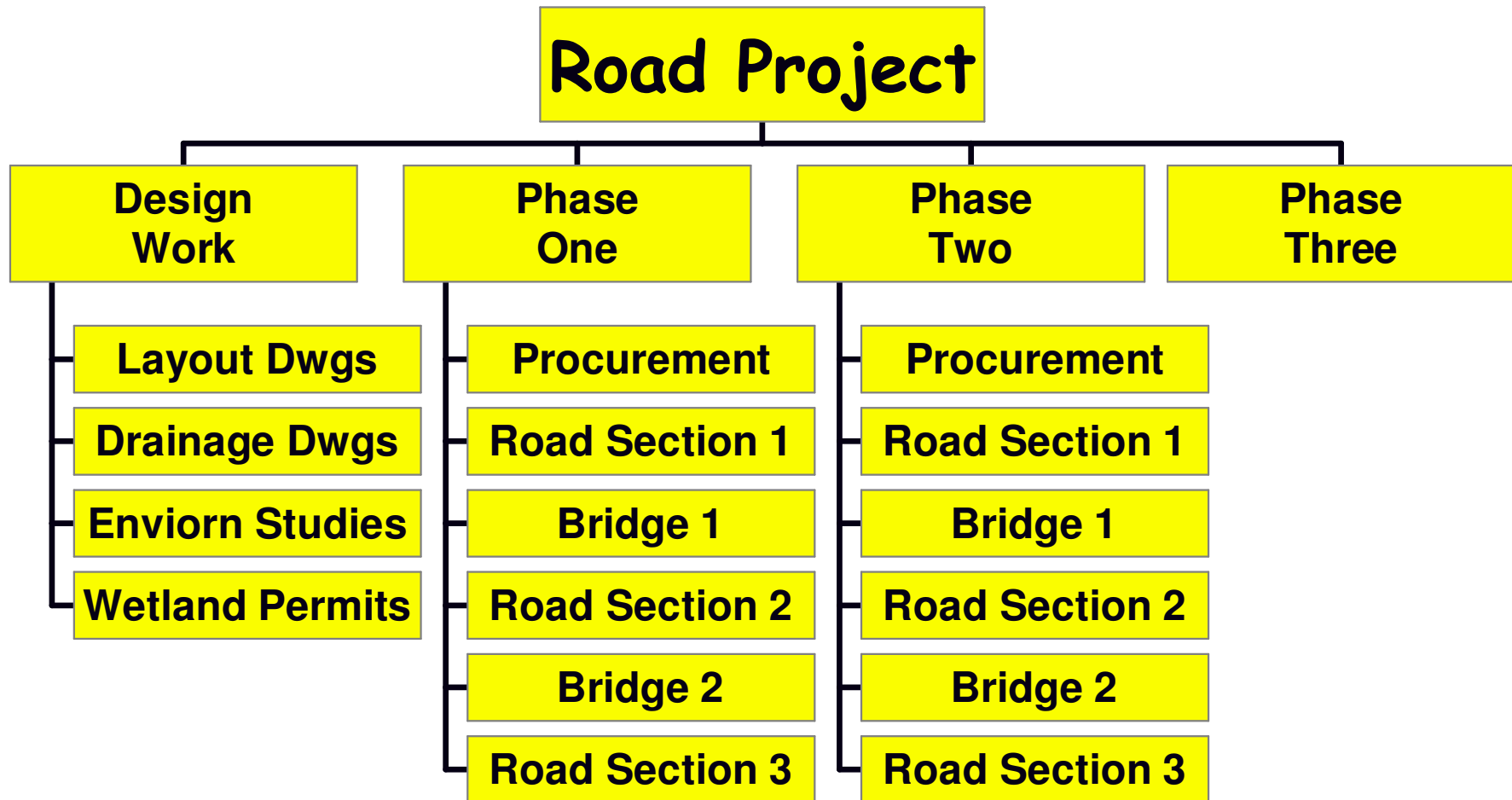
# WBS Example 1

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# WBS Example 2

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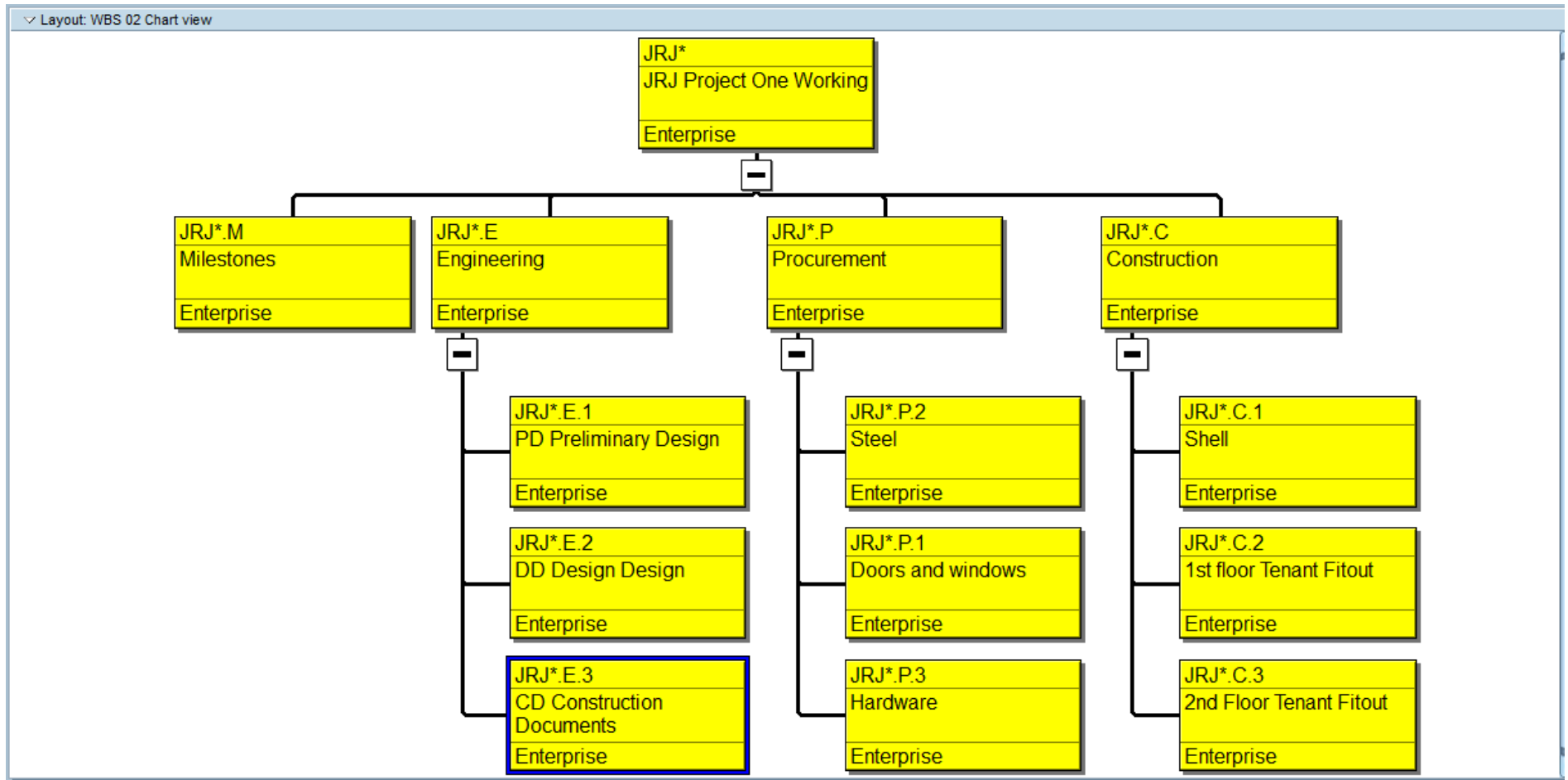


# WBS Conclusion

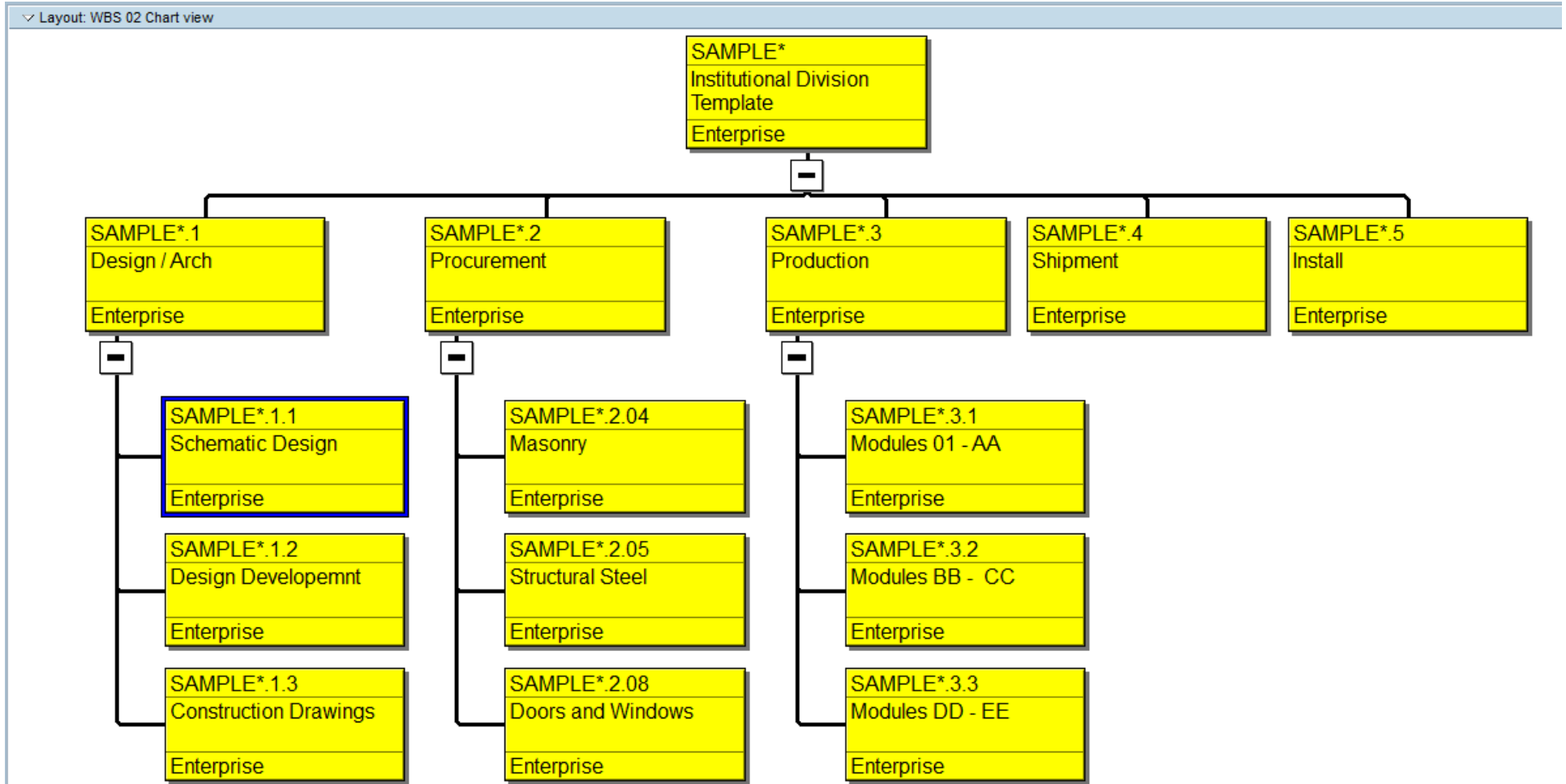
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- **By looking at the WBS, you can tell **what's** being accomplished.**
- **It makes sense !**
- **Not by Responsibility or Contractor**

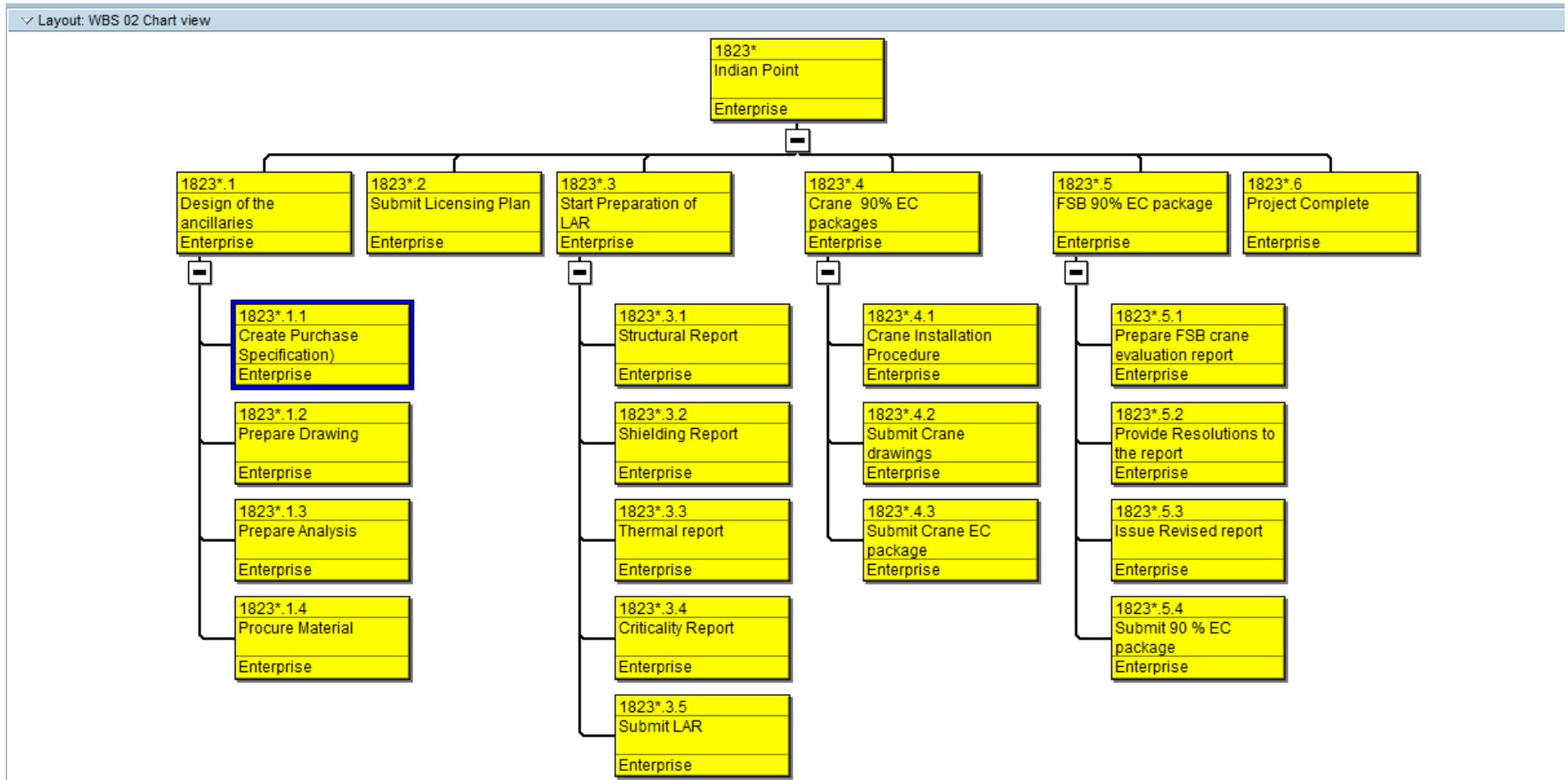
# WBS Examples



# WBS Examples



# WBS Examples



# Descriptions

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- **WBS Location / Noun / Verb**
  - This is not English class
- **WBS (Capitals)**
  - Location in the outline
  - Extremely important in critical path report
  - Important in logic windows too
- **Location / Noun**
  - What – location or area in project and item
- **Verb**
  - Action – what is being done to noun
- **Example**
- **“BLDG A 1<sup>ST</sup> FL Electrical Rough-in”**



# Description Examples

Layout: 00 Standard View by WBS		Filter: All Activities					
Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	Total Float
<b>Institutional Division Template DESC</b>		120	120		04-Jan-10	18-Jun-10	0
<b>Design / Arch</b>		80	80		04-Jan-10	26-Apr-10	0
<b>Schematic Design</b>		30	30		04-Jan-10	12-Feb-10	0
A1000	Start Project	0	0	0%	04-Jan-10		0
A1010	SD Schematic Design	20	20	0%	04-Jan-10	29-Jan-10	0
A1050	SD Schematic Design Approval	10	10	0%	01-Feb-10	12-Feb-10	0
<b>Design Developemnt</b>		30	30		15-Feb-10	26-Mar-10	0
A1030	DD Structural Drawings	15	15	0%	15-Feb-10	05-Mar-10	5
A1040	DD Mech, Elec, Plumbing Drawings	15	15	0%	15-Feb-10	05-Mar-10	5
A1020	DD Architectural Drawings	20	20	0%	15-Feb-10	12-Mar-10	0
A1060	DD Design Development Approval	10	10	0%	15-Mar-10	26-Mar-10	0
<b>Construction Drawings</b>		20	20		29-Mar-10	26-Apr-10	0
A1080	CD Construction Structural Drawings	15	15	0%	29-Mar-10	16-Apr-10	5
A1090	CD Construction Mech, Elec, Plumbing Drawings	15	15	0%	29-Mar-10	16-Apr-10	5
A1070	CD Construction Architectural Drawings	20	20	0%	29-Mar-10	23-Apr-10	0
A1100	CD Constructions Drawings Complete	0	0	0%	26-Apr-10		0
<b>Procurement</b>		25	25		26-Apr-10	28-May-10	0
<b>Masonry</b>		25	25		26-Apr-10	28-May-10	0
A1220	PROC MASN Prepare Submittal	5	5	0%	26-Apr-10	30-Apr-10	0
A1230	PROC MASN Approve Submittal	10	10	0%	03-May-10	14-May-10	0
A1240	PROC MASN Order and Deliver	10	10	0%	17-May-10	28-May-10	0
<b>Structural Steel</b>		15	15		26-Apr-10	14-May-10	10
A1160	PROC STRU STEEL Prepare Submittal	5	5	0%	26-Apr-10	30-Apr-10	10
A1170	PROC STRU STEEL Approve Submittal	5	5	0%	03-May-10	07-May-10	10
A1180	PROC STRU STEEL Order and Deliver	5	5	0%	10-May-10	14-May-10	10
<b>Doors and Windows</b>		15	15		26-Apr-10	14-May-10	10
A1190	PROC STRU DOORS Prepare Submittal	5	5	0%	26-Apr-10	30-Apr-10	10
A1200	PROC STRU DOORS Approve Submittal	5	5	0%	03-May-10	07-May-10	10
A1210	PROC STRU DOORS Order and Deliver	5	5	0%	10-May-10	14-May-10	10

# Milestones

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- **Milestone Management**
  - If the milestone is good, that section is good
  - Simple and easy for managers to understand
- **Make easy to find**
  - Place at the top of each section
  - Not embedded into the schedule
- **Levels**
  - Align with WBS
  - Level 1 – Project
  - Level 2 – Major Contractual Events
  - Level 3 – Keep points to monitor

# Milestones

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- **Level 1 – Project**
- **Level 2 – Major Contractual (Money) Events**
  - **Notice to Proceed**
  - **Substantial Complete**
  - **Complete**
- **Level 3 – Key points to monitor**
  - **Design Complete**
  - **Permits**
  - **Water Tight**
- **Level 4 – Lesser Events**
  - **Submittal Approved**

# Milestones Examples

Layout: 00 Standard View by WBS		Filter: All Activities					
Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	Total Float
<b>JOINT ARMED FORCES RESERVE CENTER - May 201</b>		508	335		15-Nov-11 A	30-Aug-13	0
1	NTP	0	0	100%	12-Dec-11 A		
90120	WORK COMPLETION	0	0	0%		06-May-13	-10
99000	SUBSTANTIAL COMP 03JUN-13 (NTP+540 CD +1CD)	0	0	0%		05-Jul-13*	-31
99999	FINAL GOVERNMENT ACCEPTANCE	0	0	0%		05-Jul-13	56
A1000	Contract duration	540	411	23.94%	12-Dec-11 A	05-Jul-13	-31
<b>PROCUREMENT</b>		296	174		15-Nov-11 A	17-Jan-13	77
<b>PRECONS</b>		223	101		06-Dec-11 A	17-Oct-12	1
PC-10000	PRECON SITEWORK	5	0	100%	06-Dec-11 A	06-Dec-11 A	
PC-10010	PRECON CONCRETE	5	0	100%	24-Feb-12 A	24-Feb-12 A	
PC-10100	PRECON ELECTRICAL	5	0	100%	16-Apr-12 A	16-Apr-12 A	
PC-10110	PRECON PLUMBING	5	0	100%	16-Apr-12 A	16-Apr-12 A	
PC-10020	PRECON STEEL	5	0	100%	07-May-12 A	07-May-12 A	
PC-10050	PRECON GEOTHERMAL	5	5	0%	29-May-12	05-Jun-12	-8
PC-10040	PRECON METAL FRAMING	5	5	0%	05-Jun-12	12-Jun-12	-18
PC-10060	PRECON ROOFING	5	5	0%	21-Jun-12	28-Jun-12	-19
PC-10140	PRECON DRYWALL	5	5	0%	09-Jul-12	16-Jul-12	36
PC-10090	PRECON MECHANICAL	5	5	0%	10-Jul-12	16-Jul-12	-14
PC-10120	PRECON FIRE PROTECTION	5	5	0%	17-Jul-12	23-Jul-12	-4
PC-10130	PRECON SITE CONCRETE	5	5	0%	17-Jul-12	24-Jul-12	56
PC-10070	PRECON GLASS	5	5	0%	25-Jul-12	31-Jul-12	-18
PC-10030	PRECON MASONRY	5	5	0%	03-Aug-12	09-Aug-12	15
PC-10080	PRECON METAL WALL PANELS	5	5	0%	11-Oct-12	17-Oct-12	1
<b>PRECON</b>		12	0		15-Nov-11 A	29-Dec-11 A	

# Activity ID

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- **Make key milestones user friendly**
  - **Easy to remember, easy to find**
  - **NTP – Notice to Proceed**
  - **SC – Substantial Complete**
- **Rest**
  - **Random numbers**
  - **No intelligence**
  - **Let the system do the work**
- **Optional for uniqueness**
  - **Beginning - some intelligence – B1, B2, B3**
  - **Depends on system and number of users**

# Activity ID - more

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- **Adding Activities after Baseline – Why?**
  - **Change Orders**
  - **Clarifications**
  - **Rolling wave**
- **Imbed update reference in Activity ID**
  - **Submission number**
  - **S01-xxxx – submission 01**
  - **If use minor intelligence (last page)**
    - B1-S01-xxxx
- **Easy to know when added into schedule**
  - **Easy to find to support owner requirements**

# Primavera P6 Implementation

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■ Setup ■ Training ■ Consulting ■ Scheduling

*Questions?*

# Primavera P6 Implementation

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■ Setup ■ Training ■ Consulting ■ Scheduling

- **Services**

- **Health Checks**

- Review installations analyzing for improvements

- **Initial setup / configurations**

- **Customized P6 Training**

- Create training based your project

- **Stock Training**

- **Program Scheduling (Multi Projects)**

- **Project Scheduling**

- Construction, Software Delivery, Refinery, Power, etc



## Primavera P6 Implementation

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■ Setup ■ Training ■ Consulting ■ Scheduling

For more information please contact:

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